

AMATEUR RADIO



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EDITORIAL - - -

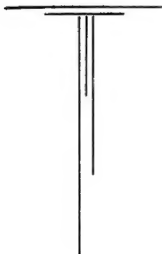
. . .

With world-wide contests having become a regular feature of our radio lives and the only difficulty to make the twelve months of the year stretch enough to hold them, a brief survey of the position of contests would not be out of place. Do contests serve a useful purpose? It sounds a rather controversial question, doesn't it, but we will answer it by saying "Yes" with reservations, and then by asking a further question. Are the useful purposes sufficiently useful? "Ah, now you are reducing the discussion to a quibble over words," a reader may say. But no, we don't agree that we are quibbling over the word "useful" because we feel that around it centres the discussion. We, of course, admit that the basic principles of competition are served, that the spirit of rivalry, the pitting of one's skill against that of others with the sheer joy of victory as the reward, is present. But does that spirit pervade all the entrants? Our reply is that it certainly does not because only a very small percentage of entrants are competitors in the average radio contest.

Let us come at the subject from a different angle. Suppose the Councils of the Radio Societies of the world got together and agreed that there would be no more contests because the number of serious competitors did not warrant their continuance. What would the average member of any one of those societies do? You know and I know that he would feel the decision almost as a personal insult, but how many of those members would be able to supply a watertight reason as to why they want a continuance of contests. Very, very few probably; this fact you can appreciate when you yourself enter wholeheartedly for a contest. At the commencement the air positively seethes with the signals of stations frantically calling and answering, but as the hours pass one by one stations drop out, except at DX peaks, until you hear only the same old handful of regular DX men. You become intrigued after a while to find out why this is, whether the right type of contest is being run or whether contests just have not the necessary appeal to the average station. At the meetings of one's Society subsequent to the test one hears on all hands, "Oh, I was just having a cut at it to work a bit of DX" (or "to work a few stations," if the test was a local one). Only the same old few work "flat out." Admittedly, the times and occasions cannot be convenient to everyone, but that can't be the case for every contest and often for as many as 90 per cent. of the entrants. Further, the entrants often total less than one per cent. of the available active stations, and the serious competitors—well, work it out for yourself!

Take some practical examples, our own country first. Why is it utterly impossible to get a team of five stations per State to compete for the Fisk Trophy tests. Ridiculous, isn't it, yet one can't blame the Contest Committee. Federal Headquarters have run every known type of test, yet the result is always the same. Look at the BERU annual test—carefully compiled rules, a paradise of countries to be worked, but the result does not differ. The same old band of DX men are heard year after year, and they number—it would be interesting to know what the percentage to the number of active Empire stations would be; a small decimal of one per cent, in all probability.

We all know that the majority enter "for a bit of fun" or "to work a bit of DX." But think, does any man emerge from any test one whit a better Ham or a better operator? Has he learned one single solitary theoretical or practical fact. No! Contests can't help a man in those ways. Therefore, we revert to our original query—Are the useful purposes sufficiently useful? Talking over the subject with the typical Ham of to-day almost leans one to the conclusion that he is a "dabbler" in his contests as in his ordinary Ham life. Thus, can one evolve a contest that will inspire a typical Ham to come out of his sloth, to break new ground, to create, to do something really worth while? Perhaps in some dim way this typical Ham realises the months and months of hard work and experiment with aërials, transmitters and receivers that go to make the essentials of the potential world contest winner probably he feels that he hasn't a chance so he enters "just for fun." To him will never come that glorious thrill of success after months of work. Can a contest be evolved, a contest which can truly be called "the perfect test," which will inspire the typical Ham to deeds of which he does not feel capable, to effort greater than ever before, to make him a better, more efficient Ham, and, finally and above all, to make him feel the effort was WORTH WHILE, and that he will try again? Such a contest and its originator may exist only in Utopia, but he and his creation will go down to posterity if he ever achieves the ideal result.



Detector Plate-Current Indicators for Low Sensitive Receivers

In a previous article the installation, calibration and use of a second-detector plate-current indicator was described, in which it was assumed that the amateur was using a superheterodyne. The application of a detector plate-current indicator is not limited to a superheterodyne, but may be used on a regenerative receiver employing several stages of tuned R.F. ahead of the detector. The average amateur receiver is usually a regenerative receiver either with or without tuned R.F. amplification, or a superheterodyne having a biased or grid-leak detector. The superheterodyne with a biased detector was treated first, since it is a high gain receiver and uses a relatively insensitive detector. The regenerative type of receiver is a low gain receiver and employs regeneration to raise the signal voltage and also employs the more sensitive grid-leak detector. A grid-leak detector equipped with a plate-current indicator is a very sensitive device, and is used in measuring very low voltages.

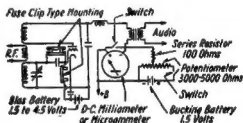
For calibration purposes it is advisable to change such grid-leak detectors over to the biased form, and this can be done by returning the ground end of the grid leak to a bias battery of 1.5 to 4.5 volts instead of grounding it through the grid coil.

Calibration of a simple regenerative receiver is not practical, since without the regenerative effect it would be quite insensitive, and could be used only at points quite close to a transmitter, since the regeneration would have to be kept at zero in order to hold a calibration.

Should the receiver employ one or more stages of tuned R.F., it is possible to change the detector to the biased form, and the added stages of tuned R.F. will so increase the sensitivity so that it can be calibrated to give accurate readings from transmitters located as high as 10 miles away and having antenna power of 10 to 50 watts. The more stages of tuned

R.F., the more sensitive the receiver. Regeneration must be kept at zero, since it is impossible to calibrate a regeneration control and expect it to hold.

Low frequency receivers, 200 to 500 Kc. range, employing several stages of tuned R.F., have been calibrated for field strength work, and the calibration has held over long periods of time, even though the receiver was subjected to rough treatment in transportation. A Government checking receiver covering 1500 to 30,000 Kc., and employing three stages of screen grid



tubes in the tuned R.F., was used in conjunction with superheterodynes and a standard signal generator for general reception work. This receiver held its calibration for long periods of time. The accuracy of the calibration decreased with increase of frequency and was unreliable below 15 metres. Since the amateur covers relatively small bands, the calibration holds for an entire band.

The installation of the instrument is the same for practically all types of regenerative receivers, but the calibration and the range of calibration will vary, dependent upon different circuits and the gain controls therein. It is necessary to install a means of bucking out the current drawn by the detector. The installation of the instrument bucking circuit and the changes in the receiver are as follow:—See Fig. No. 1.

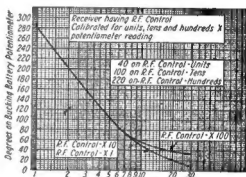
Provide a fuse-clip type mounting for the grid leak if the leak is not mounted

in this manner. Provide another clip mounting connected between the grid and a bias battery to ground. Bypass the battery with a condenser. These mountings will make the change of detector from one type to another more convenient. Adjust the bias so the detector draws between two-tenths and five-tenths milliamperes when no signal is being received. The range of instrument is dependent upon the sensitivity to change of signal desired, but an 0 to 1 mil instrument is about right. A more sensitive instrument such as an 0 to 200 or an 0 to 500 microammeter can be used, but greater care must be taken or the instrument may be easily damaged. Install the bucking circuit. It will be noted that direct current of opposite polarity is passed through the instrument so as to neutralise or buck out that drawn by the detector. A resistor is used in series with the arm of the potentiometer to limit the bucking current through the instrument and prevent damage which would result were the full voltage of the bucking battery applied to the instrument. The potentiometer should be wire wound and provided with a 0 to 360 degree dial. Switches are provided to open the bucking battery when not in use, and also to short circuit the instrument.

Procedure in calibration is dependent upon the method of controlling the gain. If the receiver has only a regeneration control, only the bucking battery potentiometer dial can be calibrated. If the receiver has two or more stages of tuned R.F., it is probably provided with an R.F. gain control. In this case the R.F. control should be provided with an 0 to 360 degree dial, since it will be possible to calibrate this dial in steps of units, tens and hundreds.

Arrangements should be made with a nearby station to provide means of varying his power over a wide range. Antenna ammeters capable of reading from 10 to 20 mils up to the maximum antenna current possible are needed, usually an 0 to 100 mil, an 0 to 500 mil, and an 0 to 3 or 5 amp. R.F. ammeters will cover the range. Start operation with an antenna current of 10 to 20 mils, and then increase it by ratios of 1, 2, 3, 4, 5 and so on up to 10. It will probably be necessary to then change instruments. The point

of change should be checked with both instruments in the circuit, and then the smaller one removed or shorted out. This will constitute a calibration on the unit scale. Now start increasing power so the indicated antenna current increases in steps of 1, 2, 3, 4, 5 up to 10. This will constitute a calibration of the tens scale. If further power is available, it will probably be necessary to change instruments and continue the same procedure for the calibration of the hundreds scale.



A. Procedure at receiver having only a regeneration control. Short meter, and see that bucking battery switch is open. Tune in transmitter by means of phones or speaker, using a little regeneration if necessary to identify the station. Cut regeneration to zero, open meter shorting switch, and have transmitter adjust his power until the instrument shows about a 20 per cent. increase in the no signal value of plate current. The transmitter antenna current should be noted, since this is the value taken for the starting point, or unity. Now see that the potentiometer is in the low bucking current position. Close the bucking battery switch and adjust the potentiometer until the instrument reads zero. Note the dial setting and call this point unity, or one. Now have the transmitter increase his antenna current, following the procedure given. After each increase in antenna current, note the dial reading. This will give you ratios of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 30, 40, 50, etc. If the series protective resistor is not too large, it is possible to run the calibration up to a point where the curve flattens out when the detector overloads. Fig. 2 shows a typical curve.

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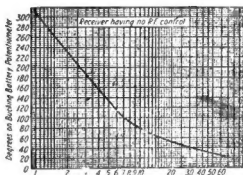


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B. Procedure at receiver having an R.F. gain control. Short meter. See that bucking battery switch is open. Tune in transmitter, using all the R.F. gain available, and a slight amount of regeneration if necessary. Cut regeneration to zero. Cut R.F. gain to zero. Open instrument shorting switch. Increase R.F. gain until instrument shows a 20 per cent. increase over the no signal value. Have transmitter decrease power to such a point that your R.F. gain is at maximum, or until he reaches the lowest dependable reading on his smallest antenna ammeter. Always adjust the R.F. gain so that the instrument reads the 20 per cent. increase above the no signal value. Now note the position of the dial on the R.F. gain control and call this point "units." Do not change the adjustment of the R.F. gain control until the bucking battery potentiometer has been calibrated for the unit scale. Now close the bucking battery switch and adjust the potentiometer until the instrument reads ZERO. Note the position of the dial and call this point unity, or one. Have transmitter increase his antenna current by the stated ratios as in A. After each increase adjust the potentiometer so that the meter reads zero, and note its position. After the antenna current has been increased to ten times its original value, slowly decrease the R.F. gain and at the same time return the bucking battery potentiometer to its unity position, always keeping the instrument reading zero. When this point is reached note the position of the R.F. gain control, and call this point "tens". Now have the antenna current increased along the 10, 20, 30, 40 ratios. It will be noted that these points will fall almost on the same points as the "units" calibration on the bucking battery dial. When the antenna current has been increased 100 times, slowly return the potentiometer dial toward the unity position as you decrease the R.F. gain control, always keeping the instrument reading zero. When this point is reached, note the reading of the R.F. gain control dial, and call this point "hundreds". If enough power and antenna ammeters of sufficient range are available, continue the 100, 200, 300, 400, etc., ratios. These points will still fall very close to the original "units," but as the R.F. stages start to overload, they will fall short of the unit calibration and finally no

increase will be noted. It is possible in a high gain tuned R.F. receiver to proceed up to the "thousands" and "ten thousands", but such calibration must be done with a standard signal



generator. These points may be plotted on semi-log paper, degrees of potentiometer dial against ratio of antenna current increase. Fig. 3 shows a typical set of curves, overlapped.

In using the last calibration for checking adjustments, one should set the R.F. gain control on one of its calibrated points, and then bring the plate-current indicator to zero. The field would be noted as the potentiometer reading times the R.F. gain control reading. Example: 8 times ten equals 80, or 5 times units equal 5.

An Unsolicited .. Testimony

The following letter dated 13th February, 1936, has been received by the Advertising Manager of Amateur Radio from Mr. Allen Fairhall, managing director of Electronic Communications Ltd., of 57 Hunter Street, Newcastle, N.S.W.:—"It is with pleasure that I write to advise the splendid results which have been achieved through the little space taken in recent issues of your journal to advertise the products of this company. Enquiries have been received from every State, some of them from men who have been inactive for some time. This seems to indicate that Amateur Radio has an appeal even to the man who is not 'on the air.' We shall certainly be taking bigger spaces in your worthy journal as time goes on. With best wishes."

Tourmaline for the Ultra H.F. Bands

MODERN DEVELOPMENTS IN
CRYSTAL CONTROL.

By VK3RX.

"Two stages and you are on 112 M.C."

What a joy that would be to the U.H.F. gang who have been having difficulty in getting a steady signal on five-metre and two-and-a-half-metre bands, but with the advent of tourmaline crystals the day is not far off when you can discard the cumbersome copper tubing lines, and with a modest two tubes put out a T9 signal equal to any on the low frequency bands.

Tourmaline is one of the semi-precious stones, and appears to be most plentiful in South Africa and Brazil, though reasonably good specimens have been found in Victoria near Beechworth. It is practically as hard as quartz and somewhat brittle,

In spite of their small size, tourmaline crystals oscillate particularly easily and do not show any sign of double peaks. It is necessary to have perfectly flat electrodes if the oscillator tube is run at full plate voltage, because any sparking due to irregularities may, under these conditions, cause part of the crystal to melt, rendering it useless; ordinary splintering, as occurs with quartz, is not experienced.

The main advantage of this crystal is that it will give a frequency about 35 per cent. higher than quartz of the same thickness, i.e., 80 metres per m.m. thickness.

According to Straubel, of the Jena University in Germany, the ratio is:

$$\text{Thickness} = \frac{146.25}{\text{frequency in KC}}, \text{ approximately}$$

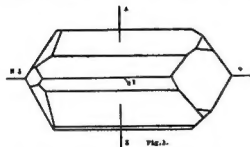
which would give us 20 thousandths of an inch for the thickness of a 40-metre crystal. Fundamental crystals on four metres have been ground and give remarkably good output.

Tourmaline has a negative temperature co-efficient of about 46 parts per million per 1° Centigrade, and for perfect frequency stability it is necessary to use an oven. For ordinary purposes, however, these crystals have practically the same characteristics as a V cut quartz plate, and may be used accordingly (without temperature control).

From personal experience, 250 volts seems sufficient to put on the plate of any crystal oscillator tube and should not be exceeded if a reasonably steady signal is sought for.

In the U.S.A. tourmaline plates are offered for sale at about \$15.00 each, but it is possible that some readers will be able to get specimens from a mineralogist in Australia; but for the

(Continued on Page 13)



and, due to its more complex chemical structure, is usually found to contain more impurities than quartz. These impurities give it the characteristic colors ranging from yellow through blue to black. The black variety is opaque, and this form (known as schorl) is generally unsuitable as an oscillator.

Tourmaline crystals are rather small in diameter and half-an-inch is considered quite a good size when dealing with this mineral. Reference to fig. 1 will show the axis of a typical specimen. In tourmaline the Z or optic and the electric axis have the same direction. Plates are, therefore, cut perpendicular to the optical axis. With quartz the plates are cut parallel to this axis.

"This Decibel Business"

By "Tiller."

"I say, Sparks, what's this decibel business you fellows are always talking about?" The crew of the yacht "Sunset" were yarning around the cabin after dinner one Saturday evening, during a week-end cruise. Pipes and cigars had been produced, and after one of those short lulls in conversation which occur on such occasions from pure contentment, the Skipper had asked the question which contrasted strangely with the previous discussion on sword-fishing.

"The decibel," said Sparks. "Oh, that's ten times the common log of P one —"

"Yes, I know," interrupted the Skipper, "but what IS it? I have an elementary conception of what a volt or an amp. might be. I learned that at school, but this new-fangled decibel seems to be a bit more complicated. I notice that even the popular radio papers use the term these days."

Sparks thoughtfully applied a match to the fag which he had just carefully and feloniously extracted from the Forrad Hand's cigarette case, and began:—

"Well, the decibel, or d.b. as it is called, is really not a new term at all. The telephone, not the radio, people were responsible for its introduction. In the old days, telephone engineers found it necessary to standardise a method of measuring loss in speaking efficiency over telephone lines. The simplest way of doing this would have been to use a section of line itself as a standard, but the loss over a section of aerial line is small, so that a very great length would be required to give any appreciable value. Besides, the nature of aerial line does not lend itself readily to the construction of a standard of loss.

"Underground cable, however, has a very much greater loss per unit length, and so it became usual to consider the loss of a line or piece of apparatus as being equivalent to that of so many 'miles of standard cable.' Of course, even a mile of cable would be far too

bulky to use as a practical standard, so small networks of resistance and capacity were made up, having similar characteristics to the 'standard' cable. Several laboratories, however, used an actual mile of real cable as a prime standard.

"The M.S.C. unit was used for many years, but when it became necessary to use higher frequencies on telephone circuits, for broadcasting purposes, for instance, engineers began to appreciate the fact that their standard had its limitations, because the loss of a mile of cable varies considerably with frequency."

"That's very interesting," said the Doctor, "I think I can see why. Was it because the electrostatic capacity of the cable bypassed more of the high frequencies than the lows?" The Doctor had recently been bitten by the Radio Bug, probably as a result of his frequent contact with Sparks on the "Sunset."

"Yes," continued Sparks. "That was exactly what happened. It was like having an india-rubber lead-line whose fathom-marks increased in spacing as a greater length was passed overboard."

"I suppose you used that lead-line to measure the tunny you caught a Lamont Reef." This remark came from Mac, but Sparks ignored it, and continued in his best lecturing manner.

"Well, some bright fellow, I think in the Bell Laboratory, hit on an entirely new method of expressing a loss in transmission efficiency. Instead of comparing the LOSS with a standard loss, he compared the power in the circuit, before the 'loss' portion, with the power in the circuit after the 'loss' portion, and expressed the result as a ratio. To do this most simply we might consider that if the input power to a certain piece of apparatus was twice the output power, the loss would be equivalent to two units; or, if the input power was three times the output power the loss would be

three units, and so on. However, this system, in practice would not be ideal because the ear, which detects all these effects, is non-linear and — "

"Just a moment," interrupted the Skipper, "I don't quite get that."

"Sorry, sir. What I mean is that our ears are very sensitive to weak sounds, but not so sensitive to strong ones. For instance, suppose we hear a certain weak sound. Now, let that sound be increased in energy, say, one hundred times. One would expect the volume apparent to the ear to increase to one hundred times also, but in practice it increases only about twenty times. Nature provides this feature as a protective measure, otherwise the ear, if made sensitive to weak sounds, would be damaged in all probability by strong ones.

"However, to get back to the decibel. If we were to express losses as simple power ratios, the difference, as perceived by the ear, between, say, two and three units, would be very much greater than the difference between, say, 100 and 101 units. What we need is a unit which is appreciable to the ear to the same extent under all conditions. Fortunately, we may obtain this feature very easily by expressing the loss as the logarithm of the power ratio, and by this means we obtain the absolute unit which is called the Bel. In practice, however, it is rather large, so we divide it into ten parts and call each a decibel, which is, therefore, defined as ten times the power ratio of the power ratio.

Now this decibel notation is very much more useful than would appear at first sight. It may be used to compare any two powers, and, therefore, to measure gains as well as losses. Also, don't forget, the decibel is not an electrical unit at all, but simply a ratio. We might quite easily say that the fishing this month has increased ten d.b. owing to the southeasterly weather. Or that the traffic over a certain road has increased so many d.b. owing to improvements on a certain section. However, we use the decibel mostly in communication circles and once his simple nature has been solved, a very useful little fellow he turns out to be."

Just at this moment, a frantic rattling on deck indicated that the proper-line needed attention and all hands stood to, the decibel, for the moment, forgotten.

Notes: Recipes and Data

For two and a bit years now we have been able to keep the standard of the technical section of this magazine well up to expectations. Six months after the first issue the technical editor's file was fat and the cream of the contributors' efforts was selected for publication.

To-day, we are sorry to say, things are different. We still have with us the men who are supporting the section in the best way they can periodically. Yet there are hundreds of hams who have not contributed a bean.

It is hard enough work as it is to have to edit articles and draw the circuits for block-making without having to squeeze persons for technical articles. In very plain words, this "Amateur Radio" of ours is not being supported as it should. The magazine committee members are putting in a lot of time that they could well devote to things that might mean a financial gain to them. Instead, the magazine must go out and contributors must be found. Does it seem reasonable that all this work should fall on the shoulders of a few? Promises from local and interstate hams have been made but are seldom realised. The general impression must be that we have only to dip a hand in the lucky bag and pull out a handful of articles, sort them out and pick the best. We wish it were like that. You have heard the home truth; now, what are YOU going to do about it? We are proud of the fact that all past contributions have been fellows who seek no remuneration for their efforts, and hope that it will continue thus.

It is within the power of every true ham to write up some sort of article. We read in the news and notes section every month of someone who has rebuilt his transmitter, receiver, power supply, and made some kind of a measuring device, or even designed a new type of oscillator. The experimental field in the radio game is unlimited and so can be the supply of data gained therefrom. All this kind of dope is valuable and can be of interest to someone else.

It is known that the feeling is that a contribution would not be of interest to others or that everybody already

(Continued on Page 12)

Station Description

G6CJ

G6CJ was founded way back in about 1925, when kilocycles were measured in wave lengths; the 80-metre band was on 90 metres, 40 was the land of the advanced "pro." and 20 metres had hardly been invented, and was, anyway, "ultra short."

Those were the days when the operator was starting out in the hope of some day becoming a radio engineer, and the consequent lack of time, knowledge and resources did not encourage the idea of Ham Radio. But with the usual ham enthusiasm, experimental work was begun and gear built, until by 1930, when a decent Qra (with mains!) became available, it was possible to think about d.x., and the d.x. history starts from then.

The present transmitter was started about then, and is built in rack form, and has been developed continuously since. It is now in a flexible state, such that it is possible to get on any band in a few seconds. One bay houses at the base the crystal unit, with a progression of FD's above it, all link coupled on plug and jack circuits. The required chain of doublers is brought into operation by plugging through and lighting their filaments.

To the right of this is a bay with a separate PA for each band, link coupled to the doublers as before. By attention to the design the tunings are independent of the links, so that all one has to do is to light certain filaments, patch the right links and hook on the feeders if not already there, and away we go. No messing about. The grids are all high-L and so flattened by grid current, and moving up and down the band only involves tuning one or two anode circuits. This is the next best thing to two transmitters where quick change is required.

The PA stages are medium power, as the licence is for only 50 watts. A 50-wattter is used in the 7 m.c. P.A., and a pair of receiving tubes in push pull on 14 m.c's.

On the receiving side, the usual "Detector and one" was developed to its best until the single-signal receiver was invented. The finer points of this were soon appreciated, and by the time of the 1933 BERU fight a home-made crystal S.S. was doing its stuff and going to prove that the d.x. was there if only it could be fished out of the mess. This receiver was developed until it was, so to speak, "kilowatts" ahead of the transmitter, and it was possible to hear much more than could ever be raised.

The VK Centenary Contest was thoroughly enjoyed, and a fb time was anticipated this year in the next attempt. It was realised, however, that to compete with the Qro stations in this part of the globe something would have to be done about that 50 watts. Alternatives were either to go Qro, which was forbidden, or else use directive aerials.

Intensive work was done on the aerial idea in September, with the result that, by the time of the contest, signals in VK had been raised by two points on both 7 and 14 m.c. The final arrangement had two half-wave horizontals—one for each band—with matched feeders. With the aid of 16-foot spreaders a pair of wires was hung behind these to reflect or direct the wave. On 14 m.c. this was easy. With the wire 35 feet long reflect o.r. took place, and by simply lowering and altering it to 31 feet it became a director and signals went the other way. On 7 m.c. the separation of the wires was only one-eighth wave, and the tuning of the radiator was so much upset by it that it was no longer possible to change over by altering the length of the free wire. The coupling was such that, even with the free wire 66 feet long, it was still a director. So it was left thus, and transposed for transmission in the opposite direction. The whole system was slung between two 60-foot poles, the wires running north-south, as VKZ1 is east and west of here.

Results from these two aerials were very encouraging. With the old pair of half wavers between the poles, it was usually possible to raise the Antipodes if they could be heard, but with the new system it became a practical certainty. Sigs. were better by one or two points, and held out after other G signals had gone.

The great point about this system is the fact that lower angle waves are radiated. The gain of three d.b.s. by sending all the power one way is hardly worth notice, but the result of saving a few hops on the way to d.x. is worth kilowatts of extra power. On shorter distances, such as 3,000 miles, no improvement was reported. "Turning-over" tests were made, and in each case the sigs. went weak and full of fading, dropping three to four points. This is because the back radiation was high angle. The local signals round the countryside went right down, thus avoiding local Qrm. The aerials were naturally used for reception also.

It was found with these aerials that signals from the Antipodes came from two opposite directions, according to the time of day. Thus on a good day VKZ1 14 m.c. signals appeared about 0700 GMT from across the U.S.A. About 1,000 GMT they get thin and hard to raise, and seem to have no particular direction. About 1,400 they are up again and coming from across Asia. On 7 m.c. they are the same except that they are absent from 0,800 till 1,700. There is evidence to suggest that certain VKZ1 stations transmit one way and listen the other!

Well, that did the trick, as nearly 100 contacts were made in the contest, which is something original for 50 watts in this part of the world.

The method of attack in the contest was to maintain a thorough knowledge of what was doing on the bands, and always, if possible, have two or three stations under observation at one time, as well as the competing stations. Thus if there are two or three "hot" competitors nearer the edge of the band than oneself, it is a great help to know that they are all busy or have worked "so and so," for you can then slip in and get him. If you fail, look up one of the others who are watching. By adopting such methods it was possible to get him

nearly every time. It was far more successful than making blind test calls and filling up an already overcrowded band. Only about three of the Qs's were made off test calls.

To facilitate this method of operation, the receiver was arranged to have two tuners working into one I.F., with one on each band or both on the same. By a switch either or both were in; and it was possible to hold two signals at once. With the additional aid of a monitor oscillator, with a large dial full of pencilled stations, it was possible to hold several at once; in fact, to "look up" old So-and-So and see if he is on the band yet, and get him! These devices turned the band into a living organism, and removed the need for constant searching and hoping. The stations were all laid out, and all it was necessary to do was to watch the right moment and get each one in turn.

I should like to say thanks to all those old friends I met in the contest, and also to new ones, and I hope to see you all again in February, if not before.

3LN showed movies of his American tour to the Melbourne meeting on February 4, and said they wanted to include Mae West among the famous figures that are being carved out of a mountain in South Dakota, but the designers of the memorial couldn't get a mountain that was big enough in the right places.

To work a twisted pair-fed doublet as a full-wave instead of a half-wave, WK3DD says add another half-wave on to one end of the ant., which does not impair the excellent impedance match and materially improves the radiating properties.

(Continued from page 10)

knows about it. That is wrong. Give us the article and let us decide whether it would be valuable to some hams or not.

Whenever possible, photographs and diagrams should be supplied. Never mind about the style of writing, v. can fix that.

Federal and Victorian Q.S.L. Bureau

(By VK3RJ, Federal QSL Manager.)



Log forms for the recent B.E.R.U. Tests may be had on application to Mr. R. Ohrbohm (VK3OC), Victorian B.E.R.U. representative, or from this bureau.

Frank Brandon (VK5FB), of Wilmington, S.A., contemplates another interstate trip. He is to be accompanied by his brother and by VK2DQ. They propose rushing through VK3 and on to Tasmania, and expect to spend a few days in Melbourne on the return journey. They will be heard all along the route per medium of portable VK5FBX during the end of February and early part of March.

The international competition of the Polski Związek Krotkofalowcow (Polish section of the I.A.R.U.) was held between December 8 and 22. Stations contacting SP during this contest should report, giving details of QSO and cypher group to the Polish QSL Bureau, PZK, LWOV, Bielowskiego 6, Poland, by May 31, 1936. Failure to report annuls the score of the SP station, and the highest competitor in each country will secure a diploma. In addition, the three highest foreign competitors will get special diplomas and a yearly subscription to the magazine, "Krotkofalowiec Polski." Unfortunately, an interpreter is not included in the last-named award.

"Tubby" Vale (VK3MK), late of Coburg, is now located at Mildura, where he is enjoying the climate and getting amongst the DX.

Victorian members who were not present at the February KP meeting missed a rare treat in the personally conducted tour of U.S.A. and Canada given by Mr. Len. Moncur (VK3LN),

by means of some thousand feet of his own "shots" and an entertaining running commentary. Self could enjoy a repeat performance.

Many thanks to all who answered the S.O.S. for the QRA of CR8AA, and the QRA of XE1JC is now required.

Cards are on hand at the bureau, 23 Landale Street, Box Hill, for the following VK3's:—AP, AX, AI, AY, BE, BS, BX, CV, CW, ET, EW, FN, FT, FC, FW, GJ, GV, GY, HE, HX, IL, JK, JR, KA, KB, KD, KG, KM, KT, KS, KY, LK, LP, NJ, NG, OI, OF, OZ, PA, PL, QL, QR, QY, SL, TC, TE, TD, UB, UJ, UY, VK, WC, WH, WX, WK, XF, YF, ZA, ZB, ZK, ZW, DINAN.

For sale, new shipment of "Dx Oil," fine for wrenched wrists and sore sit-up-ns, due to the recent B.E.R.U. contest. Recommended by 3MR and 3UK. Snowy says: "I'll bet a Ham-burg sausage to 600 D.A.S.D. reports that it will fix any radio ailment."

A chance for the last remaining record was missed by 6FO when HJ3AJH called him and he heard not! No VK6 has ever made WAC, and he would have been the first—if he had listened at that end!

6FO gave 6MN the full list of the zones for the Contest, and it took him nearly 20 minutes solid sending, while the VK3's were waiting to collect some points!

(Continued from page 8)

sake of other hams who come after you, don't pay too much for it and thus fix a high market price.

In Melbourne, quartz lease blanks have gone up from 1/- to 3/6 and 5/- on account of the demand. Until we can definitely say what type of tourmaline is suitable for oscillators, and what is rubbish, it is not advisable to pay too much for indifferent specimens. The writer has been promised a good crystal, and should this prove satisfactory, the results will be written up for "Amateur Radio" as soon as they are available.

Federal Headquarters Notes

The third annual dinner of the Wireless Institute of Australia (N.S.W. Division) will be held on Thursday, March 26, at 8 p.m., at The Dungowan, Martin Place, Sydney. Tickets are 3/6, and are available from the W.I.A. Secretary (Box 1734 J.J., G.P.O., Sydney), or at any of the W.I.A. meetings. An invitation is extended to any amateurs who care to attend. Liquid refreshments will be available in bulk at a small charge.

The end of February completes the fourth year of the Institute's activities in New South Wales. That is, of course, since it was reorganised. The Institute was originally formed in March, 1910. The ballot for the election of officers takes place during the period between the February and March General Meeting. In both the nominations and final voting all members are circularized. Some of the older members of the Council are retiring from office this year, as they have decided that they have done their share in Institute affairs, and so we may expect to see quite a few new faces on the Council. Members are reminded of the monthly technical meetings, held on the first Monday of the month at the Y.M.C.A.

VK2LZ (W. E. C. Bischoff) was the New South Wales delegate who represented this Division at the Brisbane Convention, and he will present his report on the Convention at the March Annual Meeting.

The Annual Meeting is to be held as usual at the Y.M.C.A. on March 19, when the results of the election of officers will be announced.

New South Wales will lose one of its foremost d.x. hams when VK2AH leaves for England early in March to look at television and radio in general, possibly taking in U.S.A. and the Continent. Allan has promised to bring back anything that interests the "hams" greatly.

It looks as if the Amateur Exhibition, that was talked about in New South Wales last year, will come off about May or June. There were one

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R.A.A.F. Wireless Reserve Notes

Federal Notes by the O/C (1A1-VK3ML).

A lengthy discussion took place between the Director, Deputy Director of Communications and the Staff Officer for Signals on February 5, 1936, in regard to the present position and needs of the Reserve.

It was agreed that the experimental stages of the organisation have passed, and that the Reserve is in a position to be standardised throughout in training methods and organisation.

We have something to be rather proud of in that our Reserve was the first of its kind in the field of amateur Reserves in the world, and the complete running of it has had to be of an experimental nature. There has been no other organisation to show us the way, but now we know more about the requirements of such a Reserve, our future prospects should be mighty bright. With the advent of the formation of squadrons in other parts of the Commonwealth, it is impossible to forecast our future.

Just at the moment it is rather hard to say whether there will be any Reserve left in 12 months, because of the absorption of the personnel by the permanent forces. We have had to lose several members recently, and many more will become permanent operators. If the Reserve performs no other function, it undoubtedly serves as a training basis for permanent personnel. Any member that is interested in such an occupation can obtain particulars from the Secretary, Air Board, Melbourne.

It is expected that two camps will be held later on in the year, around September, one at Laverton and one at Richmond. These camps would be for members in VMC and VMB respectively, but if any interstate members care to arrange their holidays at that time it might be possible to arrange for their attendance also.

Bulletin No. 3 is well on the way, and may reach members before this magazine. Once again it has been our

object to make it as interesting as possible with articles on the Air Force generally.

A new supply of training manuals is now ready for distribution to newly-enrolled members. There have been no changes in the procedure, just the combination of Volumes 1 and 2.

It is also most probable that when Reservists read these notes they will be in possession of their crystals and holders. Frequency assignments have been made to all ACTIVE members only. Inactive members are asked to get busy and brush up gear and procedure prior to the change over to the new frequency channels.

Another use for the Reserve has been found in VMG, where 7Z1 and 7A1 are working in conjunction with the commercial airways and the R.A.A.F. D.F. station at Western Junction by supplying weather reports daily. The service has been going for some weeks now, and has proved highly satisfactory. Old 3A6 (Bill Murden) is operating the D.F. outfit. Fine work, boys!

Victorian Notes. (3Z1-VK3UK).

Activity in VMC is always at its lowest ebb in VMC during February, owing to the BERU Contest. As so many members are keen contest men, schedules are usually abbreviated and sketchy during the contest periods. 3Z1, 3C6, 3C2 and 3B4 were heard among the d.x., and we were delighted to hear our old friend, Alf. Kerr, ex 3A4, on 7 m.c. Alf. has been "snowed under" at work for some months, and reluctantly had to transfer from VMC1 just after winning the section leaders' trophy. We are hoping he will be able to return now to active work.

As mentioned before, we are re-organising our whole method of running sections, and in view of the experience we have had in the past, we feel we will be able to evolve an

organisation far superior to anything we have used before. In order to co-ordinate all the ideas of members, a meeting of metropolitan stations is being held on the 20th, and this will be the first of a regular two-monthly meeting. As our sections now have at least one metropolitan station in each, these meetings will be far more representative of sectional ideas than the ones we used to hold four years ago. 1A1 is off on a cruise this week. A fortnight leisurely running up the coast in good weather seems a perfect holiday.

Ex 3C2 is on a car tour for his holidays, and is expected in VIM this week. We are hoping to have the pleasure of a yarn before he passes on.

Ex 3C5 and 3B3 are also on holidays. In fact, everyone but VMC's hard-working DIC seems to be having a break. HLZ!

3B1 is away on another country tour, and will be away until the middle of March. He had the misfortune to smash his crystal in his portable on the last tour.

3B5 has returned home after convalescing in Melbourne. He is well on the mend now, and is anticipating a spell of heavy work ahead.

3A5 has just finished building his new three-tube T.R.F., but has not had time to take the bugs out of it yet.

We have to congratulate 3D6 on the arrival of a junior operator. Perhaps a future Reserve member!

WEST AUSTRALIA.

Owing to the BERU Contests, no watches have been held during February. 6Z2 and 6A1 are unofficially attending a week's camp at Northam conducted by the Aero Club Reservists, and should have a good time all round during first week of March. 6B1 is missing 5A2, and as nobody here has heard JE lately, some concern is felt about his welfare. 5A2 was a valuable link and always on sked.

Correspondence Section

W.I.A., Melbourne, Victoria,
Australia.

B. Naylor,
1330 Beach Avenue,
Vancouver, Canada.

The following notes may be of some interest to VK amateurs re conditions during the test, etc., as we found it here.

It was with little hopes of being able to do any good work that I listened on 20 metres the first evening (here) of the test, as at this time of the year and night it usually is completely dead after dark P.S.T. However, much to my surprise during the 1935 test, it proved to be the best band, and the majority of contacts made from this station were on 14 m.c.

The first week-end (October 5-6) a number of VK-ZL stations were contacted between the hours of 7 p.m. and midnight (local time). However, the second week-end of test proved to be the best, 19 stations being contacted up to midnight on 14 m.c.

The third week-end of test proved to be the poorest, it only being possible to Qso three stations on 14 m.c. and five on 7 m.c.

The last week-end was good on 14 m.c., but the band went dead rather early—about 9 p.m. local time. However, 7 m.c. was good this week-end, as skip was preventing a lot of the W Qrm.

The 7 m.c. band seemed to be good all through the tests, but, due to the excessive Saturday night, Qrm was a very difficult band to Qso on, with the exception of the last Saturday night. For every ZL-VK station heard there were about 20 W stations, making it difficult to hear d.x. signals.

(Continued on Page 27)

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Divisional Notes

N.S.W. Division

By VK2IG.

Condx NDG here this last month and nothing of much importance been done.

2QE getting busy with some overdue qsl's and, as with OJ, finds it's a hard job to get up with. (Why not Qrt for about a year or so, O.M.'s?) Q.E. been nibbling the fat on 40 quite often, is giving 20 a spell.

OJ keeping fine skeds with 2AP on Sunday, and both fone vy fb; 2AP plenty of punch and nice quality. The locals here visit OJ and say "how do" to Arthur and his gang quite often.

QD building a nice pretty frame for his rig. Must be only for show, as we don't ever hear him on tho!

EU, the strain of getting his new timber vertical has been heavy, and Artie taking it easy. Has very fb qrl.

YI going to Sydney for a spell (FB!). Will be back by the time this issue appears. Is taking his "fl" portable 10 or 20 tube sss, too. Is interested in the railways, so has got a spare carriage to put it in! Also cleaned out the shack and persuaded IG to take some of the junk books. Don't know where I'm going to burn 'em either, so anyone wanting "Litterature" see us!

IG doing a little DX, but mucking about with antennas, some punk and a lot, punker! Had a go at BERU contest, but condx poor and the rig not up to the mark, so not so good. Qrt pretty rotten, too! Anyone got a spare crystal? Might even pay the freight on it, hi!

NEWCASTLE SECTION.

By VK2KB.

The first contest for the Electronic Communication trophy having been won by Charles Hedley, 2MT, the next competition to be staged by the Newcastle Amateur Radio Club was the usual 12-hour contest staged twice a year.

This was won for the third time in succession by Jim Cowan, 2ZC, in spite of a heavy handicap.

He turns in a beautiful log showin; 11 countries and 23 contacts in twelve hours' working time. 7 and 14 m.c. were used. Others to turn in good scores were 2MT, 2UF, and 2RF.

7 m.c. rather slack lately in Newcastle, 14 m.c. looking bright. Almost everyone active and rebuilding. 2ZW and 2KB promise some activity shortly.

N.A.R.C. has decided to again run a "Ham fest" for 1936, but it will be a bit later . . . probably in September.

WAVERLEY'S ANNUAL REUNION.

The oldest radio club in New South Wales celebrated, on 4th February, its seventeenth birthday.

The annual reunion of the Waverley Radio Club was held at the Grahame Memorial Hall, Charing Cross. In previous years the reunion had been held at the club rooms, but the committee were very wise in selecting the larger premises, as some 85 club members and delegates and visitors were present, and the annual reunion is unique in the annals of radio club history.

The menu, as usual, was a work of art, and ran from R. A. C. Soup to Wood (2VB) Alcohol.

Delegates were present from the Wireless Institute, Zero Beat, Manly, Lakemba, Hurstville, and Woolahra Radio Clubs; J. Moyee, Esq., represented "Wireless Weekly," D. B. Knock, Esq., "The Bulletin," and Quiet Humphrey the Second Division Signals.

The usual toast to the King opened proceedings, then W. Regan, Esq., asked that those present observe a silent period of a minute in memory of Silent Keys.

Mr. Perry, an ex-member and one of the original amateurs in this State, proposed the toast to the Waverley Radio Club. The speaker urged amateurs to look after their rights, and that they should be better recognised

munity in general. The one fact that was the basis of all speeches was the fact of the wonderful success of the club in its seventeen years of progress.

Mr. H. Petterson, VK2HP, in reply, thanked Mr. Perry for his kind remarks.

The toast to Associated Societies, moved by Mr. W. Stewart, was replied to in turn by the many delegates.

The Federal Executive of the W.I.A. W. Moore, Esq., State division of the W.I.A., C. Macgregor, Esq., VK2EH Lakemba VK2CN Zero Beat, G. Shelley, Esq., Manly, and representatives from Woollahra and Hurstville.

The toast to the Radio Inspectors' Department was moved by W. Moore, Esq., who made mention of the fact that the P.M.G.'s department was very fair to amateurs generally, and that the department might be termed pro-amateur. Mr. Macintyre replied on behalf of the department.

Mr. J. Moyes, in replying on behalf of "Wireless Weekly," made special mention of the "Wireless Weekly" cup, which was shortly to be competed for again. Mr. D. B. Knock, radio editor of "The Bulletin," also replied on behalf of that paper.

The Highlights were reached shortly afterwards, when those present were asked to contribute their share of the humour. 2JT, as usual, led with one on Trolley Buses, and quite a large number of those present contributed to the list of jokes. The reunion, the largest ever held of any radio club, was eminently successful, and Gordon Wells, who occupied the chair, and other members of the committee are to be congratulated.

LAKEMBA RADIO CLUB.

VK2LR.

The meetings of the above club are held every second Tuesday at the club rooms, 334 Canterbury-road, Hurlstone Park. The Slade Cup DX Contest was held over the first two week-ends in February. Most of the DX was worked on 20mx. Best conditions prevailed over the first week-end, as a very severe thunderstorm on the second Sunday made conditions almost hopeless on all bands.

The next contest is for the Chanex-Dulytic Cup, to be conducted in April, this being a VK-ZL test, so that all may have a chance of taking part.

The club would appreciate the co-operation of VK and ZL amateurs in this test. Points are allotted for contacts with the various States and New Zealand, and the competitor with the highest number of points is the winner. Last year the scores were very close indeed.

Conditions for d.x. on 28 m.c. very poor. Yanks were almost impossible to raise, although they could be heard some days. One was even heard as late as 2 p.m. Europeans also conspicuous by their absence.

VK2EO Qsoed an HJ and took the opportunity of testing different aerials for d.x. on 10, and a big 7 m.c. single-wire-fed Hertz came first, sigs. being reported R6 on 7 m.c., 66ft. Hertz; R4 on 10 m.c. doublet, and R2 on 20 m.x. doublet. A big aerial operated at a harmonic seems to be best for d.x. at this Qra, too.

VK2YC has been putting up new aerials, and his Qra is beginning to look like Pennant Hills Radio Centre now (VIS, 2FC, 2SM, 2ME, etc., etc.), he has that many aerials up; but they must be for birds to rest on, as he never seems to be using them.

VK2LZ has been taking a well-earned rest from 28 m.c., as is also VK2HZ.

Conditions for interstate Qso's were very fb at times, but absolutely punk at others. Best sigs, and most reliable seem to come from VK4 and VK5. Old 5HG was heard with a fairly decent self-excited sig. one Sunday about the end of January.

Victorian Division

KEY SECTION NOTES.

By VK3YO.

At the February meeting of the Key Section, the main feature was a moving picture record of the trip to the U.S.A., taken by VK3LN. It was a most interesting show and was enjoyed by everyone.

The big event of February was the B.E.R.U. contest, and from all accounts there were some big scores put up in the Senior Section. At the time of writing the junior contest is still unfinished, but conditions on the first week-end were very good.

Judging by the number of stations on the air, the two contests appear to have had a large entry and the win-

ners do not seem to be outstanding.

Information is not yet to hand re the A.R.R.L. DX contest for 1936, but many stations are already preparing for the big Qrm of March.

On 12 m.c. quite a number of W.A.C.'s are being obtained through OA4J, who has been very consistent for the past two or three months.

Another strong South American on 14 m.c. is OA4AA, who is using class B phone, so those looking for a phone Qso with this continent are advised to keep an ear cocked for him. He is in approximately the middle of the 14 m.c. band, and his carrier is a good R7 to R8.

VK3DP is operating again from his new Qra and is putting out a good loud signal. Unfortunately for 3OC. DP's location is less than 500 yards away! However, as 3OC says, "It might be worse," DP nearly shifted next door.

PHONE SECTION NOTES.

By VK3DH.

The first meeting for 1936 of this Section took place unfortunately on Tuesday, 28th January. We would have passed over the meeting in view of the day on which it occurred, but since the allocations had already run for two months—December and January—we decided that was actually a necessity, so allocations only was to be the business.

As it happened, there was more business on hand, in connection with the necessity for all stations to carefully look after their frequencies and method of operation, as now—if any station fails to make full use of an allocation or actually suspends operations for an indefinite period—there may not be any possibility of getting back on the band.

The allocations committee have caused a slight stir by watching (or listening) very closely to as many stations as possible right at the hour of closing-down time, and a few unlucky members have lost a considerable number of marks through being unfortunately caught late.

For a number of years now the rule has been to subtract half a point for each half-minute over the correct time. Since the committee deal in hun-

dredths of a mark when placing the order of merit—this half-mark business assumes comparatively large proportions.

A few members expressed their disapproval of an allocations officer penalising one station when there might be another on at the same time—also running late. There are not enough members to the allocation committee to "park" on each frequency and so check everyone fairly, so we have to trust to luck.

The moral, of course, is never to be one second late and then you must be safe—and when in doubt, close down a minute or two early.

One of our phone "gang," 3LN, treated the general members of the Division to a very "F.B." lecture and moving picture (without sound) show, on Tuesday, 4th February. No doubt this will be commented on elsewhere in full—but I should like to say here that everyone present obviously enjoyed very much the effort.

I guess that at the meeting of 25th February our chairman, 8TH, will enlarge on his observations of ham radio in general during his tour of New Zealand.

WESTERN DISTRICT NOTES.

By 3HG—3OW.

3JE now active on 229 metres and putting out very nice phone with an input of about eight watts from the D.C. mains.

3AC, in Hamilton, has also put in an appearance on the 200 metre band, and is also putting over very decent phone.

3DX still holding the fort in Warrnambool with his high-class transmissions. 3WW and 3JA active on 7 m.c., the former with quite good phone. The Camperdown gang inactive, 3GQ spending his spare time catching up with the 800 Qsl's he owed after the DX contest!

3OW has at last got his long-promised new receiver going and should be heard on more in the future. 3HG now on Qrp, as his engine has given up the ghost. Has been hearing quite a lot of DX on 28m.c. This station will be operating portable gear under the call of VK3EF during the end of March and early in April, while on a motor tour of VK2. Would welcome a call any time on 3.5 and 7 m.c.

South Australian Division

Well, the Christmas meeting was held on 18th December, and took the form of a social with supper. There was a large attendance and all had a good time. Transmitters' meeting on 29th January was well attended and all enjoyed the lecture by Mr. Alf Traeger, on the subject: "Radio and the Inland Mission." A cricket match is being arranged with the Fullarton Radio Club.

20 and 10 METRES, by 5KL.

20 Metres. — Conditions have not been at their best for some weeks now, although a large amount of DX is being worked.

5GW has a hefty signal and sure works them by the large pack of cards he sent away last meeting. How about some dope, George?

5LJ heard, Qso'ed HH5PA with YL OP on key. Beware, Reg.!

5WK has nice crystal note now; also new antenna single-wire fed.

5TX, VK5, Qrp, King, been working some DX, also called by GZAS. F.B. Jim.

5ZX, 5RT, and 5WR make big noise here in Prospect and work plenty DX.

5FM. Haven't heard Pete on of late. What's up, Pete, o.m.?

5LD has no trouble to raise some DX.

5RX been trying his rig out for junior B.E.R.U. Using same antenna as 5WK.

5HD says he is satisfied with his antenna now.

5MY reports condx very quiet on ten.

5LJ has heard all continents, but has Qy'ed to 20 again.

5ZC very active and has Qso G, ON, DX, P.A., OK, W and J.

5KL Qso HJ3AJH, Wednesday, 12th February, 10.30 a.m. Only want Europe and South Africa now for Wac on ten!

Western Australia Division

By Radio VK3ZC.

Well, boys, here we are again, and the main item of the month has been the visit and stay of VK2IC and the hurried exit and entrance of ZE1JC,

who is going over to VK8, 4, and 5, but will return to VK8 on his return journey. 6DH and 6LJ were the only ones to see the latter, so it can be seen the huge hurry he was in. Hi! There is a shack meeting being held at VK6WS on 20th February, and 2IC is going to be the speaker.

The lecturette given at the general meeting on 13th February was by 6SA and entailed some 28 m.c. detailed dope, which was taken in by all and given in the usual FB style.

VK6CX has had to resign the secretaryship and we will greatly miss his remarkable consistency. Just to keep our friend 6WS interested, he was duly installed as secretary. Also, owing to change of business address, 6LV has had to resign all touch of the magazine and trust that my successor will get every help from the gang.

On 19th January, the social outing was held to Penguin Island, and 6WS made the trip in his motor launch, Bambina, together with radio and 6RL, 6MW, 6GM, and a few students. The Osc Section of 6MW gear was used and a 16-foot chunk of wire used as antenna. 6WH and 6LV only were Qso'ed, as the gang had to leave the boat very early and continue on their journey by car, leaving the gear parked in the tub.

Haven't seen 6AC for a few weeks: 6AG Qrl as consulting radio engineer, and haven't Qso'ed him. 6BB—a-ha. Jack hasn't come to light with that Matilda 1855 model for the W.I.A. museum yet, but will forward by first post. Oh, yeah! 6BN speaks about the electric eye—in case you don't understand, it is a gadget for looking through curved key-holes. Oh, what a good one! 6CA, down at the sailors' residence, not heard of late. 6CB has not got over that nasty Mae West one put over him! 6CP—oh, boy—talk about a saxophone causing riots! Clarrie's accordion is sufficient! 6CX is a man with tons of time now—just ask him. 6DA taking a long time to rebuild. Must be manufacturing everything. 6DJ seen for the first time in about two years. 6CY another Port ham gone in liquidation. 6DH, too. Qrl service work to think of ham radio—was seen touring about town the other night in his Standard bus, and, boy—was he rushed—now! 6FG must be the Wx that keeps him off. 6FI, on sometimes, but is the wander-

ing ham! 6GM uses a type 00 tube—that has you tricked—yea, an 800. 6HD—No, don't disturb! 6JK—No, sir, won't break the ice.

6JE has had his holidays and hasn't hit here, however. HI! 6KZ, with a note like a lot of marbles sliding down a roof, is heard a lot. 6KB has a good sig. and Qso's plenty Yanks. 6JW entered both senior and junior B.E.R.U. contests and did quite well. 6LK successful in first class. Congrats Minor and very fb. 6LK seen in town and heard very seldom. 6LY has ylitis very very, very bad, and an auction sale will be held by him shortly, I think! 6LJ is still alive and very qrl. 6MN has been away again. I think Syd lives in the mulga half the time. 6NO has at last Qso'ed South America. Norm. has not been on the air for years and more years, but comes on and Qso's H.C. You know it isn't fair. 6NJ still on 7 m.c. with canned music! 6SA not heard on 7 and 14 much—guess he must be on 28. 6WM on 7 m.c. very seldom. 6WH on fone, beg pardon, fone? Yes, fone! 6WS on 7 m.c. sometimes, but we have him cornered now with the secretary's job. HI! 6ZZ not heard up here much, owing to skip. And, lastly, don't let 'em catch you on 1st April!

Tasmanian Division

By 7PA.

The lecturer being one of our younger members, Mr. R. Shorthouse, who took "Alternators" as his subject. Unfortunately, the State Field Day for 1936 fell through at the last minute, owing to insufficient northern members being able to make the trip, but an attempt is being made to bring it off within the next few weeks.

Quite a stir, and no small amount of comment was caused in 200-metre circles recently when the Council, acting on first-hand information, decided to prohibit the practice of giving cheerios and personal greetings over the air on this band. It is the Council's intention to preserve this band here as far as possible, and it will force the measure to this end.

VK7 STEPS OUT!

5-Metre Equipment Aids Regatta Association.

A step forward in 5-metre work was made when two transceivers were

pressed into service at the Hobart Regatta on the 11th of February, as the outcome of this division's offer to the regatta committee. Communication was maintained throughout the morning between a launch moored off the starting buoy and the judge's box, and much information was passed through that would have been impossible otherwise, and the whole affair was claimed 100 per cent. 7JH operated at the starter's end and 7NC handled the shore end.

Should soon be heard. VK7YL, congrats on your success recently, Joy. Another YL prospect for VK7 is close at hand, if school can do the trick. Ask Buck how she handles the key!

7JB still finds time for a little DX-ing, says 20 m.x. fone fb lately. Should be with 8-tube super, a pair of 800's and a good locality, plus a 50-watt permit. 7CW suffering that universal malady of Qyl. Once a week for the next twelve months. — 7JH, with his technical class. Of course this will still leave time for a Qso or two! W.A.C.—What a curse! Buck on when Chummie wants to listen—have to work in you boys.

The only way to an A.O.P.C. for sure is school—so our Sec. says—can't find time to study when home.

Doing good work—Skeeter, as assistant secretary—Good lad, K.V.

7NC hopes to be active shortly when Qra stability is secured.—1936 resolutions, Nev!

7LJ appeared at last meeting—must be annual vacation; ay, Lon!

7BJ speciality—all pens destroyed if not kept beyond his reach on meeting night. Is it a nervous temperament or sheer destructiveness, Joe?

7PA at it again—yeah! Back on 40 m.x. again lately; seems to disturb a W or two between times.

7WI still living in hopes; voted a few pounds of the accrued surplus to purchase some gear recently.

Northern members little heard of—except when they want to growl. What about some notes, one of you chaps? Qrn still pretty bad here.

VK-ZL INTERNATIONAL CONTEST.

The Contest Committee desires to have the logs of the following competitors acknowledged as having arrived too late for competition:—CR7MB, CT1JU, EI5F, PAOXR, PAOCE, W1EZ, X2C.

Amateur Radio

Divisional Addresses :-

NEW SOUTH WALES	BOX 2127L, G.P.O., SYDNEY
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TASMANIA	BOX 547E, G.P.O., HOBART

1936—RADIO AMATEUR'S HANDBOOK

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In the chapter devoted to transmitter design, the theoretical and practical considerations involved in designing and planning transmitters are given comprehensive treatment, while in the chapter on transmitter construction, all of the very latest circuit developments of proven merit are incorporated. There is, in it, dope on all types of transmitters that any amateur could want, including the most modern multi-band transmitters with coil switching.

An enlarged chapter on keying methods is followed by a chapter on the fundamentals of radio telephony, which is a thorough and concise treatment of design—from microphones to controlled carrier systems. The constructional chapter on radio-telephone transmitters gives full details of many successful types.

The ultra-high frequencies are well covered with two big chapters telling how the super-regenerative receivers work, and how to build them; about super-hets and THE NEW SUPER INFRA-GENERATOR RECEIVER. Constructional dope for the various types with the acorn, glass and metal tubes is included. The U.H.F. transmitter chapter is a general treatment of the problems of simple circuits, linear oscillators, and oscillator-amplifiers.

The power supply chapter is treated in greater detail than ever, covering receiver-packs, voltage dividers, and supplies for grid bias, as well as all the normal equipment found in modern stations.

Antenna design is covered thoroughly. Numerous charts facilitate the planning of everything from simple single wire antennas to complex directional arrays. Another new chapter is devoted to instruments and measurements, their design and practical use. Included, of course, is the cathode-ray oscilloscope. The chapter on station assembly incorporates new ideas that new equipment has made possible. Communications Department chapters contain the latest dope on good operating practices and the present field organisation set-up. In addition, of course, there is the usual—but not so usual—appendix with its wealth of general information. Price: 7/6. Postage, 1/-.

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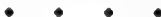
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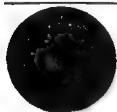


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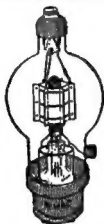
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(Continued from Page 14)

or two obstacles that couldn't be passed too well last year.

These charming resonant filters are making large holes in the band over here, and undoubtedly elsewhere, too. They kick up a devil of a row locally, but one thing must be admitted—they make wonderful copy. I.C.W. is not in accordance with the P.M.'s regulations.

Married life hasn't changed 2JX; he still changes his Qra as frequently as before. Four times in a year is fair going.

The R.S.T. systems never took on too well, and now most of the amateurs use abbreviation. Q for Qsa; it has no very apparent advantages.

Popular Opinion points to VK3UK as having the most consistent unfiltered signal in the recent Beru Tests. Anyone challenging his position will have a hard job to prove it to 3RX, who lives within half a mile of 3UK.

(Continued from Page 16)

During the last VK d.x. test the best work was done on 7 m.c. (the 14 m.c. band being completely dead) on Friday evenings and Saturday mornings, and no work was attempted on the Saturday evenings, due to Qrm here. However, this year, as the test was only open the one evening (Saturday), it would have proved impossible to make much of a score if it had not been for the unusual conditions of 14 m.c.

Rig here is same as last test except for the final stage, which was changed to a single ender, using an HK354 (Gammertson) tube in final. Input was 400 watts on both 20 and 40 bands.

This year antennas used were for 40 half-wave horizontal and for 20 half-wave vertical, both centre fed, with twisted pair feeders of No. 14 weatherproof telephone wire. These antennas have been in use since March, 1935, and have proved considerably better than any antenna previously used.

—B. Naylor (VE5BI).

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The Magazine Committee desires to express its thanks to all contributors of articles, notes, etc., for "Amateur Radio."

We are only too intimately aware of the care and attention regular contributions demand, and our thanks are, therefore the more sincere.

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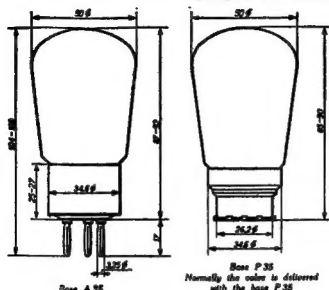
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